

CLAIMS

1. Process for adjusting the sound volume of a digital sound recording characterised in that it comprises:

- a step consisting of determining, in absolute values, for a recording, the maximum amplitude values for sound

5 frequencies audible for the human ear,

- a step consisting of calculating the possible gain for a specified sound level setting, between the maximum amplitude value determined above and the maximum amplitude value for all frequencies combined,

10 - a step consisting of reproducing the recording with a sound card by automatically adjusting the amplification gain level making it possible to obtain a sound level for the recording of a specified value so that it corresponds to the gain calculated for this recording.

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2. Volume adjustment process according to claim 1, characterised in that the maximum amplitude value determination step comprises:

- a step consisting of counting the number of samples of the recording with a specified amplitude, for all the amplitudes existing in the recording,

20 - a step consisting of classifying the amplitudes of the number of samples found in increasing order,

- a step consisting of storing in memory the maximum amplitude, for all frequencies combined, and the amplitude, for which the order number in the classification carried out is n ranks less with reference to the rank of the maximum amplitude, the amplitude found corresponding in this case to the maximum amplitude for
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30 frequencies audible for the human ear.

3. Volume adjustment process according to claim 2, characterised in that n is determined so that the degradation of the reproduction quality of the recording is not perceptible to the human ear.

4. Volume adjustment process according to claim 2 or 3, characterised in that n is of the order of 10 and preferably equal to 4 or 5.

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5. Volume adjustment process according to claim 1, characterised in that the maximum amplitude value determination step comprises:

- a step consisting of counting the number of samples of the recording with a specified amplitude, for all the amplitudes existing in the recording,
- a step consisting of classifying the amplitudes of the number of samples found in increasing order,
- a step consisting of calculating the mean value A_{mean} of the n' highest amplitudes occurring at least k' times in the recording.

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6. Volume adjustment process according to claim 1, characterised in that the maximum amplitude value determination step comprises:

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- a step consisting of compressing the recording by means of at least one psycho-acoustic mask making it possible to eliminate inaudible sounds from the initial recording,
- a step consisting of decompressing the recording,
- a step consisting of searching the maximum amplitude on the decompressed recording, this amplitude corresponding

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in this case to the maximum amplitude for frequencies audible for the human ear.

7. Volume adjustment process according to claim 6,
5 characterised in that the psycho-acoustic mask(s) is /are applied using a compression process, such as MPEG-1 Layer 3 or AAC.

8. Volume adjustment process according to any of claims 1
10 to 7, characterised in that the reproduction step comprises a dynamic reproduction sound level adjustment step on the recording consisting of authorising a specified gain for the low-pitched and/or high-pitched sounds in the recording, the gain corresponding
15 approximately to the attenuation applied during the reproduction of the recording.

9. Use of the automatic volume adjustment process according to any of claims 1 to 8, on an audiovisual
20 reproduction system characterised in that the recording is stored in memory in the reproduction system with the corresponding calculated gain and audiovisual reproduction system reading means giving access to the gain value to control the gain circuits of the digital
25 signal processing processor of the digital audiovisual reproduction system to adjust the sound level accordingly.

10. Volume adjustment devices, characterised in that it
30 comprises dynamic adjustment means for the reproduction sound levels of the recording, accounting for a specified gain for the low-pitched and/or high-pitched sounds in

the recording and the gain corresponding approximately to the specified attenuation to be assigned during the reproduction of the recording to evaluate the amplifier input gain.